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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/799,734	03/15/2004	Akihiko Asakawa	250251US0CONT	2076

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EXAMINER
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HU, HENRY S

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 02/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/799,734

Applicant(s)

ASAKAWA ET AL.

Examiner

Henry S. Hu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on IDS of September 8, 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>5 pages</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. It is noted that this application **10/799,734** filed on 03/15/2004 is a CIP of PCT/JP02/10055 filed on 09/27/2002, which carries a priority date of 09/27/2001. It is also noted that USPTO has received three **IDS'** filed on March 15, 2004, May 20, 2004 and September 8, 2004 respectively. **Claims 1-7 are now pending** with only one independent claim (Claim 1). An action follows in response to Applicants' **Status Request** filed on January 10, 2006.

#### *Specification*

2. The disclosure is objected to because of the following informalities:

On **page 14 at line 23 and page 17 at line 4**, two recitations of "perbutyl perpivalate" and "perbutyl pivalate" being used for the same compound of **PBPV** may be improper. The Applicants need to confirm the proper one. Appropriate correction is required.

#### *Claim Objections*

3. Claim 6 is objected to because of the following informalities:

On **Claim 6** at line 2, claim dependency recitation of "Claim 1" needs to be changed to "**Claim 5**". It is noted that Claim 5 has the non-vinylidene fluoro-resin having a Tg of 0-40 °C; while Claim 1 has only the non-vinylidene fluoro-resin having a Tg of higher than 40 °C.

*Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. *The limitation of parent Claim 1 of the present invention relates to a fluoro-resin powder coating composition characterized by comprising a non-vinylidene fluoro-resin having a Tg higher than 40 °C and a resin having a Tg of from 0 to 40 °C. See other limitations of dependent Claim 2-7.*

6. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Uemae et al. (US 5,898,043).

Regarding the limitation of parent composition **Claim 1**, Uemae et al. disclose that a **powder coating composition** may comprise at least **four** components as: (A) a resin powder comprising a film-forming resin such as **fluoro-resin**, (B) a crosslinking agent, (C) a charge-controlling agent, and (D) a film smoothness improver (abstract, line 1-4; column 2, line 17-22; column 9, line 57 – column 10, line 19; see **fluoro-resin** at column 5, line 8-22, particularly

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see lines 13 and 17). Uemae et al. further disclose that such a fluoro-resin has a Tg at 0-100 °C (column 5, line 23-24) and is a copolymer composed (A) mainly of at least one fluorinated monomer from tetrafluoroethylene (TFE), trifluoroethylene (TrFE), hexafluoropropylene (HFP), fluorinated alkyl vinyl ether (PAVE), fluorinated alkyl acrylate and the like **to be with (B) other non-fluorinated functional co-monomer(s)** (see various functional groups at column 6, line 11 – column 8, line 20). It is noted that the above-mentioned fluorinated monomers are not related to vinylidene type at all in view of chemical structure. Attention is directed to the fact that various types of polymeric or copolymeric resins suitable for using as charge-controlling agent (C) and/or film smoothness improver (D) have been disclosed by Uemae; at least some of them have **a Tg temperature falling within the claimed range of 0-40 °C**. Therefore, Uemae anticipates the limitation of parent Claim 1.

7. Regarding **Claim 2**, such a weight ratio is conventional used in the art (see the amount used for additives throughout the specification such as columns 9-10).

Regarding **Claims 3-4 and 7**, non-fluorinated functional co-monomer(s) (to be copolymerized with fluorinated monomer) may carry various types of functional groups as specifically disclosed from column 6, line 11 to column 8, line 20. For instance, it may include hydroxyl, carboxylic acid, amide, amino, glycidyl, and the like polar or neutral polar groups.

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Regarding **Claims 5-6**, various types of resins useful as charge-controlling agent (C) and/or film smoothness improver (D) have been disclosed by Uemae (column 9, line 57 – column 10, line 19). In a close examination, at least some polymer resins are related to type of polyester (column 9, line 67; column 10, line 1), acrylate (column 10, line 11-12) and non-vinylidene. Some of the functional groups are related to carboxylic acid, epoxy, maleic anhydride, halogen atom and the like, which are useful for crosslinking with other functional group(s) such as from a curing agent.

8. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Adachi et al. (US 5,998,507 or its equivalent GB 2,325,235 A).

Regarding the limitation of parent composition **Claim 1**, **Adachi et al.** in each of US and GB patents disclose that a thermosetting **powder coating composition** may comprise at least **three components** as: **(A) a base resin such as fluororesin having functional group(s)** (column 5, line 48 – column 6, line 27), **(B) a crosslinking agent**, and **(C) a water-dispersable synthetic resin** (abstract, line 1-4; column 2, line 61-64; column 5, line 7 – column 6, line 61; see **fluororesin** at column 5, line 7-21, particularly see lines 13 and 21). **Adachi et al.** further disclose that such a fluororesin has **a Tg at 40-100 °C** (column 5, line 21). **Adachi et al.** furthermore disclose that the synthetic resin used in component (C) has **a Tg less than 40 °C** and may be a copolymer from acrylic acid, methacrylic acid, styrene and the like (column 6, line 51-61). As known in the art, fluororesins would certainly cover polymers from non-vinylidene monomer(s). Therefore, **Adachi** anticipates the limitation of parent Claim 1.

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9. Regarding **Claim 2**, such a weight ratio is conventional used in the art (see the amount used for additives throughout the specification).

Regarding **Claims 3-4**, base resin such as fluoro-resin used in component (A) has functional group(s) as discussed above (column 5, line 48 – column 6, line 27). For instance, it may include hydroxyl, carboxylic acid, amide, amino, glycidyl or epoxy, and the like polar or neutral polar groups.

Regarding **Claims 5-6**, the synthetic resin used in component (C) may be a copolymer from acrylic acid, methacrylic acid, styrene and the like (column 6, line 51-61). Therefore, such a functional group can be effectively crosslinked with other functional group(s) such as from a curing agent.

Regarding **Claim 7**, fluoro-resins as known in the art would certainly cover copolymers made from non-vinylidene type fluoroolefin monomer(s) with other co-polymerizable monomer(s).

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being obvious over Labana et al. (US 3,758,634) in view of Uemae et al. (US 5,898,043) or Adachi et al. (US 5,998,507 or its equivalent GB 2,325,235 A).

Regarding the limitation of parent **Claim 1**, **Labana et al.** has disclosed a **powder coating composition** may comprise at least **three** components as: (A) a copolymer of glycidyl methacrylate having a Tg of 40-90 °C, (B) a crosslinking agent, and (C) a polymer resin useful as a flow control agent (abstract, line 1-25; column 4, line 6-62; column 5, line 23-38). Labana et al. further disclose that such a polymer resin in component (C) useful as a flow control agent has **a specific Tg temperature below at 40 °C** and it is a copolymer from polylauryl acrylate and the like (column 5, line 23-27).



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12. With respect to parent Claim 1, the discussion of Uemae and Adachi for 102 rejections of this office action are both incorporated here by reference. In a close examination, Labana has already used a **copolymer of glycidyl methacrylate having a Tg of 40-90 °C** as component (A), he is only silent about using a **fluorinated** analogue polymer. Each of **Uemae and Adachi** has disclosed using such a fluorinated polymer in making a powder coating composition (see above-mentioned 102 rejections). Each of Uemae and Adachi has also shown that such a polymer may be **either fluorinated or non-fluorinated**. In summary, **fluorinated polymer and non-fluorinated polymer are functionally equivalent and inter-exchangeable in the course of making a powder coating composition** (see Uemae at column 5, line 5-24; see Adachi at column 5, line 7-18).

Therefore, one having ordinary skill in the art would have found it obvious **to modify** Labana's copolymer of glycidyl methacrylate so as to be fluorinated **and/or replace it with** a fluorinated analogue as taught by Uemae or Adachi. By doing so, one would expect to succeed as usual in making a powder coating composition based on functional equivalence and inter-exchangeability. Additionally, such a fluorinated composition would certainly carry unique properties due to the existence of fluorine atom.

13. Remaining dependent **Claims 2-7** can be rejected from either the disclosure of Labana or from the teaching of Uemae and Adachi.

***Conclusion***

14. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure. The following references relate to a fluoro-resin powder coating composition comprising (A) a non-vinylidene fluoro-resin having a Tg higher than 40 °C, and (B) a resin having a Tg of 0-40 °C:

US Patent No. 5,147,934 (or its equivalent EP 301,557) to Ito et al. only discloses the preparation of a thermosetting powdery coating composition comprising a functional group-containing fluoro-resin having a Tg temperature of 30-120 °C with some curing agent (abstract, line 1-15; column 2, line 34-58). **Although some additives can be added (column 8, line 37-55), the additional use of resin having the claimed Tg temperature of 0-40 °C is not disclosed or suggested.** Therefore, Ito fails to teach or fairly suggest making the powder coating composition of present invention.

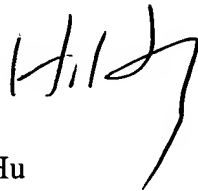
15. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Dr. Henry S. Hu** whose telephone number is (571) 272-1103. The examiner can be reached on Monday through Friday from 9:00 AM –5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The fax number for the organization

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where this application or proceeding is assigned is (571) 273-8300 for all regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Henry S. Hu

Patent Examiner, Art Unit 1713, USPTO

February 1, 2006



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